

I claim:

1. A synchronous rectifying control circuit of a flyback switching power supply
connected to a secondary side of a transformer in said flyback switching
power supply, said circuit at least comprising:
 - 5 a plurality of sets of power source ends arranged at an output end of a
secondary side coil of said transformer and having a first power source
output end and a secondary power source output end;
a plurality of rectifying circuits connected with said secondary power source
output end of said power source ends and used to rectify a voltage waveform
10 between said first power source output end of said power source ends and a
reference potential end;
a set of induction ends arranged at the output end of said secondary said coil
of said transformer and having a first induction end and a second induction
end, said second induction end being said reference potential end, said first
15 induction end being connected to a rectifying diode, which is used to rectify
said first induction end and said reference potential end to form a detection

end having a waveform with the same phase as said power source ends; and
a synchronous control circuit connected to said first power source output of
said power source ends and said detection end and having a synchronous
input end and a control end, said synchronous input end being used for input
5 of a synchronous signal, said control end being connected to said rectifying
circuits and used to control synchronously said rectifying circuits to generate
a uniform rectifying response period.

2. The synchronous rectifying control circuit of a flyback switching power
supply as claimed in claim 1, wherein each of said rectifying circuits is
10 composed of an FET and a diode, said diode is shunted between a source and
a drain of said FET, said drain of said FET is connected to a negative pole of
said diode and connected to said second power source output end of said
power source ends, and a gate of said FET is connected to said control end of
said synchronous control circuit.

15 3. The synchronous rectifying control circuit of a flyback switching power
supply as claimed in claim 1, wherein said reference potential end in said

rectifying circuit and said induction end is a ground.

4. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 1, wherein said input signal inputted from said synchronous input end in said synchronous control circuit is a synchronous signal generated by a PWM controller at a primary side of said transformer.
5. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 1, wherein said synchronous control circuit further has a waveform adjustment end externally connected to a resistor for adjusting the DC voltage of said waveform adjustment end to change the voltage output of said rectifying circuit, thereby reducing or increasing a synchronous rectifying response period.
6. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 5, wherein said waveform adjustment end connects said resistor to said first power source output end to reduce the synchronous rectifying response period of said rectifying circuit.
7. The synchronous rectifying control circuit of a flyback switching power

supply as claimed in claim 5, wherein said waveform adjustment end connects said resistor to said reference potential end to increase the synchronous rectifying response period of said rectifying circuit.

8. The synchronous rectifying control circuit of a flyback switching power

5 supply as claimed in claim 1, wherein a comparator is provided in said synchronous control circuit, said comparator has a positive input end, a negative input end and an output end, said positive input end connects a first resistor to said detection end and connects a second resistor to said reference potential end, said negative input end connects a third resistor to said first
10 power source output end and connects a fourth resistor to said reference potential end, said output end connects a fifth resistor for feedback to said positive input end to convert the waveform of said detection end into a waveform having an apparent slope.

9. The synchronous rectifying control circuit of a flyback switching power

15 supply as claimed in claim 8, wherein a synchronous drive circuit is further provided in said synchronous control circuit, said synchronous drive circuit

is composed of a plurality of transistors, and is connected to said synchronous input end, said control end, said output end of said comparator, said first power source output end and said reference potential end to drive and control said rectifying circuits for generating a synchronous rectifying
5 response period.

10. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 1, wherein said synchronous control circuit can be packaged into an IC with eight pins, which at least comprises a power source pin, a ground pin, a detection end pin, a waveform adjustment end pin, a
10 synchronous input end pin and a control end pin.

11. A rectifying control circuit of a flyback switching power supply connected at a secondary side of a transformer in said flyback switching power supply, said circuit at least comprising:

a set of power source ends arranged at an output end of a secondary side coil
15 of said transformer and having a first power source output end and a secondary power source output end;

a FET, wherein a drain thereof is connected to said second power source output end of said power source ends and a source thereof is connected to a reference potential end so that the voltage waveform between said first power source output end and said reference potential end can be rectified
5 through conducting or shutting off said FET;

a set of induction ends arranged at the output end of the second side coil of said transformer and having a first induction end and a second induction end, said second induction end being said reference potential end, said first induction end being connected to a rectifying diode to rectify said first
10 induction end and said reference potential end to form a detection end having a waveform with the same phase as said power source ends;

a comparator having a positive input end, a negative input end and an output end, said positive input end connecting a first resistor to said detection end and connecting a second resistor to said reference potential end, said
15 negative input end connecting a third resistor to said first power source output end and connecting a fourth resistor to said reference potential end,

said output end connecting a fifth resistor for feedback to said positive input end to convert the waveform of said detection end into a waveform having an apparent slope; and

a drive control circuit composed of a plurality of transistors to form a control input end and a control output end, said control input end being connected to
5 said output end of said comparator, and said control output end being connected to said gate of said FET to drive and control said FET for increasing or decreasing the rectifying response period.

12. The synchronous rectifying control circuit of a flyback switching power
10 supply as claimed in claim 11, wherein a diode is shunted between said source and said drain of said FET, and said drain of said FET is connected to a negative pole of said diode and connected to said second power source output end.

13. The synchronous rectifying control circuit of a flyback switching power
15 supply as claimed in claim 11, wherein said reference potential end is a ground.

14. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 11, wherein said negative input end of said comparator forms a waveform adjustment end and said waveform adjustment end is externally connected to a resistor for adjusting its DC voltage to change the voltage output of said FET, thereby reducing or increasing a rectifying conduction period.
15. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 14, wherein said waveform adjustment end connects said resistor to said first power source output end to reduce a synchronous rectifying response period of said rectifying circuit.
16. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 14, wherein said waveform adjustment end connects said resistor to said reference potential end to increase a synchronous rectifying response period of said rectifying circuit.
17. The synchronous rectifying control circuit of a flyback switching power supply as claimed in claim 11, wherein said FET, said comparator and said

drive circuit are packaged into an IC with five pins, and the IC at least comprises a power source pin, a ground pin, a detection end pin, a waveform adjustment end pin, and a rectifying output pin.